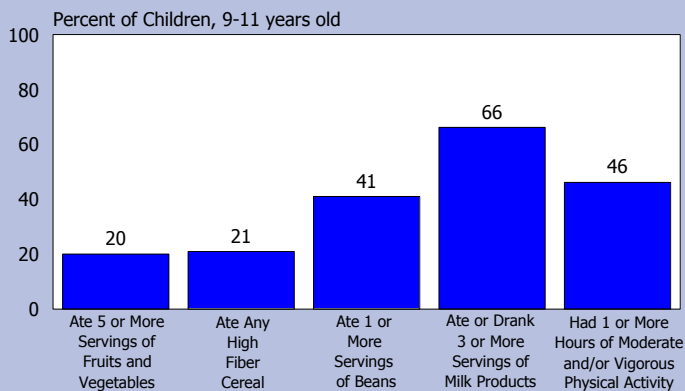


A Special Report on Policy Implications from the 1999 *California Children's Healthy Eating and Exercise Practices Survey*

Revised August 2002

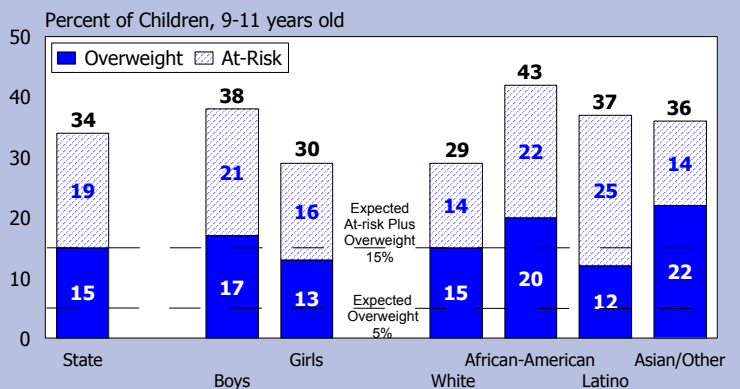


Most California Children, Ages 9-11 Years, Did Not Meet Dietary and Physical Activity Recommendations for Good Health in 1999



Source: Public Health Institute, 2001

One in Three California Children, Ages 9-11 Years, Was At-Risk¹ or Already Overweight² in 1999



¹ Body Mass Index = 85th percentile to 95th percentile

² Body Mass Index = 95th percentile and above

Source: Public Health Institute, 2001



Research conducted by Public Health Institute
www.phi.org



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About the Survey

The *California Children's Healthy Eating and Exercise Practices Survey (CalCHEEPS)* was conducted for the first time from April 21 to June 28, 1999 with 9 to 11 year-old children. There are no other statewide surveys of diet and physical activity for children in the upper elementary grades of school. *CalCHEEPS* findings on dietary intake and physical activity have potentially serious health repercussions and urgent policy implications. This is a special analysis in response to the Healthy School Environment Policy and Community Action Summit, held in September 2000. It will be followed by the complete report on the findings of the survey in 2003. All differences reported are statistically significant at the $p < .05$ level unless otherwise noted.

Sources of Food for School-Age Children

Besides meals prepared by parents, major sources of food included the school meal program and meals the children prepared themselves. More than one in seven children reported eating school breakfast, and over half ate school lunch on a typical school day. Many children prepared at least some of their own food: 50 percent reported preparing their own after-school snacks, 47 percent made evening snacks, 40 percent fixed breakfasts, and 16 percent prepared lunches.

High Levels of Overweight

Parents reported height and weight for their children. Body Mass Index (BMI) was calculated, using the formula, BMI equals weight in kilograms divided by height in meters squared.¹ Based on national standards for children, a BMI at or above the 95th percentile for age and gender is considered overweight for children, while one from the 85th to the 95th percentile is considered at-risk for overweight.²

Over one-third of the children surveyed were overweight or at-risk for overweight. African-American, Latino, and Asian/other children were more likely than white children to meet this criterion.

¹ Must, A., Dallal, G. E., & Dietz, W. H. (1991). Reference data for obesity: 85th and 95th percentiles of body mass index (wt/ht²) and triceps skinfold thickness. *Am J Clin Nutr*, 53, 839-46.

² Kuczmarski, R.J., Ogden, C.L., Grummer-Strawn, L.M. et al. (2000). CDC Growth Charts: United States. Advance Data No. 314. URL: <http://www.cdc.gov/nchs/data/ad314.pdf>

Healthy eating and sufficient physical activity are cornerstones of obesity prevention. Compared to children who were not at risk, children who were overweight/at-risk:

- ◆ Ate fewer servings of fruits and vegetables (2.9 vs. 3.3/day)
- ◆ Drank more servings of soda and sweetened beverages³ (1.3 vs. 1.1/day)
- ◆ Were more likely to have eaten high-fat snacks on a survey day (64 vs. 56 percent; $p=0.054$)
- ◆ Ate fast food more (1.4 vs. 1.1 times/week; $p=0.051$)
- ◆ Spent 20 minutes longer per school day watching TV or playing computer and video games (averaging 101 vs. 81 minutes)
- ◆ Were less likely to have taken part in lessons on nutrition (50 percent vs. 64 percent).

School-Related Disparities

School-related disparities correlated with both race/ethnicity and household income.

School Meal Programs and Food Choices

Many California children participated in school meal programs, especially those from low-income and African-American and Latino households. Children from the lowest income households were most likely to participate in the school lunch program daily, compared to children from middle-income or more affluent households (72 vs. 50 percent and 20 percent, respectively).

To assess the nutritional implications, three dietary recommendations outlined from the *California Daily Food Guide* were used:

- ◆ 5 or more servings of fruits and vegetables,
- ◆ 3 or more servings of milk, and
- ◆ 1 or more servings of beans every other day.

Lower household income was positively related to consumption of fruits and vegetables and beans. A possible reason is greater participation in the school meal programs by less affluent children. For fruits and vegetables, more children from the low- and middle-income households (26 and 22 percent, respectively) consumed 5 or more servings a day, averaging 3.4 servings, compared to 16 percent of children from higher income households, averaging

³ Diet soda excluded.

2.9 servings. Children from the lowest income households were more than twice as likely to consume a serving of beans over the two survey days, than those from the highest income households (61 vs. 28 percent).

Asian/other children were least likely to participate in school lunch programs, averaging 2.0 times/week compared to 3.8 for African-American children, 3.4 for Latino, and 2.5 times/week for white, although the latter did not reach statistical significance. They also consumed the fewest servings of milk products (2.9 vs. 3.3 to 3.7 servings for children from other racial/ethnic groups) and of fruits and vegetables (2.6 vs. 3.2 to 3.4 servings).

This survey found a highly positive correlation between school meals and better dietary intake, although most children's diets failed to meet health recommendations.

Nutrition Education

About three-fifths of the children reported having a lesson in nutrition and health, and two-thirds reported having a lesson on exercise and health during the current school year. Participation in classroom nutrition education was positively related to both healthier eating and increased physical activity. However, a highly significant disparity was found in reported access to nutrition education. Access to nutrition lessons was least common among children living in households that utilize Food Stamps (46 percent for users vs. 60 percent for non-users). Within income subgroups, access was most common among children from high-income households; 64 percent took part in nutrition lessons compared to 52 percent of children from middle-income households and 59 percent from lower-income households.

Equal access to nutrition education may also help address disparities in physical activity. For example, children with access to nutrition lessons were also more likely to meet physical activity recommendations than those without nutrition lessons (50 vs. 40 percent). Increased access to nutrition education might particularly benefit African-American children's physical activity participation, as almost one-third reported exercising less than 30 minutes a day compared to 11 percent for white, 15 percent for Latino, and 16 percent for Asian/other children.

Vending Machines

Access to soda through vending machines on school campuses was reported by 16 percent of California 9-11 year olds. In addition, 8 percent reported having vending machines with candy, chips, and cookies. Similar to nutrition education, vending machine access was related to race/ethnicity and household income. Children from low-income households were more likely to report access to both candy and soda vending machines at school (18 and 25 percent) compared with children from middle- (2 and 11 percent) and high-income (9 and 15 percent) households.

Access to soda vending machines was reported more by Latino (20 percent) and Asian/other (24 percent) children than by white or African-American children (10 and 9 percent, respectively). Regular access to vending machines with soda, candy, chips, and cookies on school campuses may place these children at an increased risk of consuming high calorie, low nutrient foods.

Physical Education

The positive benefits of daily exercise include reducing stress, learning social skills, and improving classroom attentiveness. Yet, California children are falling short of both the national physical activity recommendations specified in the *Dietary Guidelines for Americans*, as well as the State physical education (PE) mandate for elementary schools, namely:

- ◆ 60 minutes or more of daily moderate and/or vigorous physical activity and
- ◆ 200 minutes or more of PE every 10 school days, respectively.

Significant racial/ethnic and household income disparities were found in the reported prevalence of PE. Thirty-five percent of African-American children and 38 percent of those from households receiving Food Stamps reported participating in PE less than once a week, while the state average was 21 percent. Children from households receiving Food Stamps also reported fewer minutes of PE than did other children (24 vs. 34 minutes on average spent in PE).

Children from low and middle-income households were less likely than those from high-income households to attend a school requiring PE (80, 82, and 91 percent, respectively).

Policy Implications

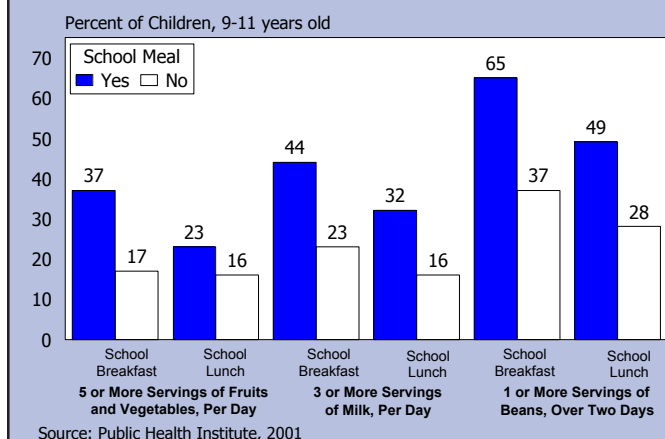
School Meal Programs

Schools should increase participation in nutrition programs offered by the USDA and assess the feasibility of offering “universal” school lunches to all children.

Large numbers of school children have access to school meal programs, and program participation showed a strong positive relationship with better diets, but participation is relatively low. Obtaining commitments from all schools to optimize utilization of school nutrition programs is urgent.

Findings supporting new policy decisions:

School Meals Helped California Children, Ages 9-11 Years, Meet Dietary Recommendations for Good Health in 1999



- ◆ School meal programs are widely available
 - ◇ 95 percent of children reported their schools serve lunch and 67 percent said their schools serve breakfast.
- ◆ Most children report eating school meals at least once a week
 - ◇ 72 percent reported eating school lunch one or more times in a typical school week, but only 41 percent reported daily participation.
 - ◇ Only 15 percent reported eating school breakfast on a typical school day
- ◆ Children participating in school meal programs get more fruits and vegetables, beans, and milk, regardless of income
 - ◇ Children participating in the school breakfast and lunch programs on the recorded diary days were more likely to meet the 5 A Day health recommendation for fruit and vegetable consumption than those not eating school meals (37 vs. 17 percent and 23 vs. 16 percent, respectively).

- ◇ On average, children eating school breakfast consumed over one serving more of fruits and vegetables (4.3 vs. 3.0 servings) and those eating school lunch consumed over one-half of a serving more (3.4 vs. 2.8 servings) than children not receiving these school meals.
- ◇ Children eating school meals were more likely to meet the recommendation of eating 1 serving of beans every other day. School breakfast participants averaged 0.6 of a serving and school lunch participants averaged 0.4 of a serving a day, compared to 0.3 and 0.2 of a serving for those not participating in the respective school meal programs.
- ◇ Children who participated in school meals on average drank 0.7 and 0.8 of a serving more milk than those not eating school lunch and breakfast.
- ◇ Children participating in the school meal programs were also more likely to meet the health recommendation of 3 or more servings of milk products per day. Seventy-nine percent eating school breakfast and 74 percent eating school lunch did so, compared to 63 and 51 percent for non-participants.

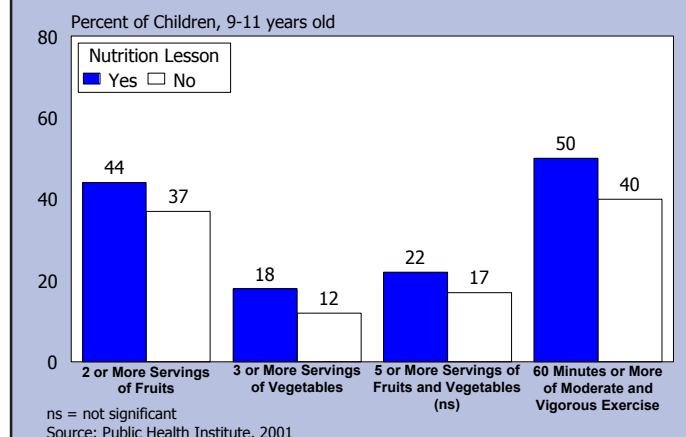
Nutrition Education

Nutrition education should be offered to all children.

Nutrition education was associated with better eating and exercise behaviors, but only 58 percent reported having nutrition lessons.

Findings supporting new policy decisions:

Nutrition Lessons Helped California Children, Ages 9-11 Years, Meet Recommendations for Fruits, Vegetables and Physical Activity in 1999



- ◆ Meeting diet and activity recommendations
 - ◇ Nutrition lessons were positively related to meeting recommendations for vegetables, fruits, and exercise.
 - ◇ Children who said they had nutrition lessons were more likely to eat at least 2 servings of fruits (44 vs. 37 percent), 3 servings of vegetables (18 vs. 12 percent), 5 servings of fruits and vegetables (22 vs. 17 percent; $p=0.079$), and exercise moderately and/or vigorously for 60 minutes each day (50 vs. 40 percent).
- ◆ Knowledge of correct recommendations
 - ◇ Knowledge of healthy eating and exercise recommendations was also associated with participation in nutrition lessons.
 - ◇ Children who received lessons were more likely than other children to believe that 5 or more daily servings of fruits and vegetables (38 vs. 28 percent), 3 or more daily servings of milk (75 vs. 63 percent), and getting exercise 5 or more times per week (62 vs. 44 percent) was needed for good health.
- ◆ Eating fruits and vegetables and getting physical activity
 - ◇ Children receiving nutrition lessons reported eating over two-thirds of a serving more fruits and vegetables than those without lessons (3.6 vs. 2.9 servings).
 - ◇ In addition, these children participated in more total minutes (87 vs. 74 minutes) and vigorous minutes (40 vs. 31 minutes) of physical activity, and fewer minutes of sedentary activity (82 vs. 96 minutes).
- ◆ Healthy weight status
 - ◇ Nutrition lessons were positively associated with healthy weight among California children, with fewer children reporting height and weight measurements that were at-risk of overweight (17 vs. 22 percent) or already overweight (12 vs. 20 percent).

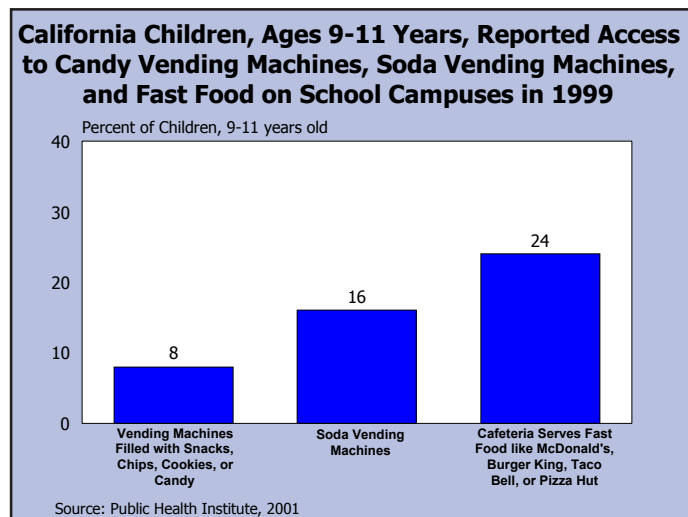
Vending Machines and Fast Food

Elementary schools should model healthy eating by limiting the sale of fast foods and snack foods to those that are lower in fat and sugar and by encouraging greater consumption of fruits and vegetables. Student access to vending machines should be prohibited in elementary schools.

Fast foods and vending machines stocking soft drinks, candy, chips, and cookies were available at schools to many 4th and 5th grade students. Healthy food choices

should be made available to children in all school-related settings, including concession stands, school stores, fund-raising activities, and at other school events.

Findings supporting new policy decisions:



- ◆ Vending machines at schools
 - ◇ Eight percent of children reported that their school has vending machines with snacks, chips, cookies, or candy, and 16 percent reported that their school has soda vending machines.
- ◆ Fast foods
 - ◇ A surprising 24 percent of students reported that their school cafeteria serves students fast food, such as McDonald's, Burger King, Taco Bell or Pizza Hut. When fast food is served as part of elementary school meals, the weekly menu including them must meet USDA standards.
 - ◇ Children who reported eating fast food on a typical school day consumed more servings of soda and sweetened beverages (1.5 vs. 1.1 servings), sweets (2.3 vs. 2.0 servings), and high-fat snacks (1.3 vs. 1.0 servings) than those not eating fast food.
 - ◇ In addition, children who ate fast food reported eating on average a serving more of all high calorie, low nutrient foods measured (which included soda and sweetened beverages, sweets, and high-fat snacks), compared to children not eating fast food (5.1 vs. 4.1 servings).
 - ◇ Children meeting the physical activity recommendation of 60 minutes or more of moderate and/or vigorous exercise each day were less likely to eat frequently at fast food restaurants than were children who reported lower activity. Seventy-four percent of active children versus 55 percent of less active children ate fast food less than twice a week.

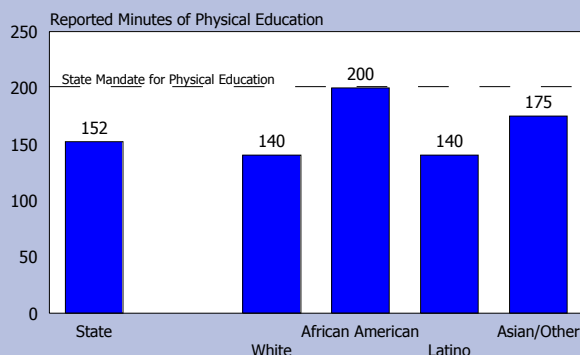
Physical Education

School districts should require more physical activity on a daily basis for all children, with activities tailored to developmental readiness and the establishment of an active lifestyle.

Many children failed to meet physical activity recommendations. This may be attributed, in part, to the fact that the reported time spent in school physical education fell short of the State mandate for elementary school students.

Findings supporting new policy decisions:

Minutes of Physical Education Reported by California Children, Ages 9-11 Years, Estimated Over Ten School Days in 1999



Source: Public Health Institute, 2001

- ◆ **Physical activity recommendation**
 - ◇ Less than half of California children surveyed (46 percent) met the physical activity recommendation of 60 minutes or more of moderate and/or vigorous exercise each day for good health.
- ◆ **Physical education (PE) in schools**
 - ◇ Seventeen percent of children reported that they do not receive any PE or gym classes at school.
 - ◇ During a typical school week, only 18 percent reported getting PE 5 times, 20 percent reported 3-4 times, and the majority (40 percent) reported attending PE classes 1-2 times.
 - ◇ On average, the number of PE classes per week was 2.3, with a length of 33 minutes per class. This is almost one hour short of the mandated 200 minutes of exercise every 10 days.

More About the Survey

The *California Children's Healthy Eating and Exercise Practices Survey* was performed under contract by Fleishman-Hillard Research to the Public Health Institute. The survey was funded by The California Endowment, the state's largest health foundation and the United States Department of Agriculture. A mailing was sent to a demographically balanced sample of 2,000 households with children, ages 9-11 years, who were participating on a market research panel. Parental permission was secured for all participants. Parents were asked to assist their child in keeping a two-day diary of foods they ate and the physical activity they had done on two consecutive school days. For the dietary portion of the survey, families recorded the types and number of servings of nine food groups children had consumed for each of six daily eating occasions.

Eight hundred fourteen children completed this part of the survey by the June 8 deadline. The sample of 814 had a sampling error of ± 5 percentage points at the 95 percent confidence level. A sub-sample of 394 children took part in a follow-up, non-assisted telephone survey on their knowledge, attitudes, and beliefs about healthy eating and physical activity. The response rate was 41 percent for the diary and 51 percent of those for the telephone survey that followed.

The 814 participants were almost evenly divided between boys and girls. Forty-three percent were white, 38 percent Latino, 7 percent African-American, and 11 percent Asian/other. The white sample was comparable to that from the 1998 Current Population Survey of California (CPS) for age, household income, and household size. The heads of households in the minority samples tended to be younger. The mail and telephone survey results were weighted to reflect the CPS findings for children ages 9 to 11 based on race/ethnicity, household income, and number of children in the household between the ages of 9 and 11. Most children were in the fourth or fifth grades. Almost nine out of ten children attended public school, and 2 percent were home-schooled.

Twelve percent of the children came from households receiving Food Stamps, 18 percent came from households with less than a \$20,000 a year income, and 44 percent came from households with an annual income of \$50,000 or more.

There are certain limitations to generalizing from these survey data. While the response rate was well within the range expected for a journal mail survey of youth, it was lower than that of other types of surveys. These respondents are a "best-case" sample. As a market-research panel, the children lived in stable households that were interested in research and willing to complete the food and exercise diaries. All households were English-speaking. However, the time of year was not a best-case scenario because the diaries were collected in the early spring, a time of relatively low seasonal availability of fresh fruits and vegetables.

Note on statistical analysis: This report looks at bivariate relationships unadjusted for any other variables.